

Appl. No. 09/879,452
Amdt. Dated July 20, 2005
Reply to Office action of May 20, 2006
Attorney Docket No. P12674-US1
EUS/J/P/05-3161

REMARKS/ARGUMENTS

Claim Amendments

The Applicant has amended claims 1 and 7. Applicant respectfully submits no new matter has been added. Accordingly, claims 1-12 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 103 (a)

Claims 1-3 and 5-6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Onoe *et al.* (US 5,361,396 hereinafter Onoe) in view of Ernam, *et al.* (US 6,148,201 hereinafter Ernam). The Applicant respectfully traverses the rejection of these claims.

The Onoe reference appears to disclose a system for registering mobile stations in a wireless system. The service area in Onoe is covered with a plurality of location areas, each area supporting a plurality of cells that relate to a specific base station. When a mobile station moves beyond the border of the original registration cell, updating for the mobile station is carried out in the cell in which the mobile station stays. (Abstract). When a location code in a mobile station does not coincide with any one of the location codes for the group to which the mobile station belongs in broadcast information, location codes are updated in a home memory station and the mobile station. Also in a fixed network a paging table is stored, which lists a plurality of zones for each group for each location code, and paging information for call to a mobile station is transmitted by the base stations which are listed in the related group of the location registration area in the table. (Summary).

Onoe discloses that the mobile stations in a particular location service area are labeled as being in the same group. Onoe also describes a stored table that contains groups of locations of the individual cells and zones. However, Onoe does not disclose a MSC pool in which the MSCs can page a mobile station in any of the global paging areas.

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The Ernam reference is cited for disclosing Base station controllers communicating with a MSC pool. Ernam appears to disclose a base station controller in network routing circuitry that stores the ID of the BSC currently serving the mobile unit. However, Ernam does not supply the limitation of a MSC pool with all the MSCs capable of communicating with any of the base stations in each of the global paging areas.

The Applicant respectfully directs the Examiner's attention to claim 1:

1. (Currently Amended) A wireless network providing global paging of mobile stations service by the network comprising:

a pool of mobile switching centers (MSC), for servicing mobile stations within a specified service area of said wireless network; and

a radio configuration database (RCDB) for defining a plurality of global paging areas within said specified service, the global paging areas being dynamically changed by maintaining a history of the movement of the mobile station and adjusting the associated location areas accordingly and the global paging areas having a hierarchical structure comprising:

base station controller/radio network controllers (BSC/RNC) each of which manage

a plurality of location areas in which each location area in turn manages associated cells, and each MSC in the pool of MSCs can communicate with each of the BSC/RNCs in each of the plurality of global paging areas. (Emphasis added)

The Applicant respectfully asserts that the Onoe and Ernam references do not disclose (directly or inherently) at least the following features present in Claim 1; 1) dynamically defined global paging areas 2) MSC pool and 3) each MSC in the pool can communicate with each of the BSC/RNCs in the global paging areas.

In the Applicant's invention, when a mobile station leaves a particular cell, the MSC that originally registered the mobile station will page the original registration chain (Location area and cell) first. Then, if the mobile station does not respond, the MSC

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pages the whole global paging area to which the location area belongs. A global paging area in the MSC pool is essentially a subset of the network service area and is defined in the RCDB. In the present invention, the network is divided into global paging areas and the information (including BSC, location area and cells) regarding the areas is entered into the RCDB. A history of the mobile station locations is maintained to dynamically change the global paging area of the mobile station. The MSC pool is different from having multiple MSCs in a network as disclosed in the Onoe reference. In contrast to Onoe, each of the MSC's in the MSC pool in the Applicant's invention has the capability to communicate with all the Base station controllers in the network. Essentially, the MSC's act as one MSC (para. 30). The Applicant respectfully requests withdrawal of the rejection of claim 1.

Claims 2-3 and 5-6 depend from amended claim 1 and recite further limitations in combination with the novel elements of claim 1. Therefore, the withdrawal of the rejection of claims 2-3 and 5-6 is respectfully requested.

Claims 4 and 7-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Onoe in view of Ernani in further view of Kim, *et al.* (US 6,343,216 hereinafter Kim). The Applicant respectfully traverses the rejection of these claims.

The Ernani reference is cited for a MSC communicating with a pool of BSC's via a mediator. The Applicant's invention does not use a mediator and each MSC in the MSC pool can communicate with each of the BSC's in the global areas.

The Kim reference is cited for disclosing paging a mobile station globally within a Mobile communication system when a response is not received when paged in a respective cell. The Kim reference appears to disclose a method of automatically reconnecting a dropped call wherein the Base station informs the MSC of the break and the MSC pages a group of base stations to attempt to reconnect.

The difference between the present invention and Kim is that Kim's MSC can page a broad area, but the page is sent to the cells assigned to the paging MSC (Col 6, lines 56-58). In other words, the MSC pages only the cells specific to the MSC. There is no indication that the MSC can page into other defined paging areas as described in the

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Applicant's invention. However the Kim reference does not supply the missing element of a MSC pool communicating with the BSCs and maintaining a history of the mobile station locations to dynamically change the global paging area of the mobile station.

Claim 4 depends from claim 1 and contains the novel limitations of claim 1. The limitations in claim 7 is analogous to claim 1 and claims 8-10 depend from claim 7 and contain the same limitations of claim 7. This being the case, the Applicant respectfully requests the withdrawal of the rejection of claims 4 and 7-10

Claims 11 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Onoe in view of Ernani in further view of Kim in further view of Hanson (US 6,035,203 hereinafter Hanson). The Applicant respectfully traverses the rejection of these claims.

The Hanson reference appears to disclose a method and arrangement for paging mobile stations. Hanson records a location of the mobile station and starts a timer. If the page occurs at one of three threshold times, an initial page is sent to cell groups according to the thresholds. If the time is short, the new registration cell and its neighbor cells are paged. If the time exceeds the third threshold, "flood" paging of all MSCs is performed. In effect, Hanson discloses expanding or contracting a global paging area with respect to a threshold value.

The Hanson reference is different from the Applicant's invention in that Hanson records time in order to increase or decrease the size of the paging area. The Applicant's invention records the location of the mobile station in order to adjust the size of the global paging area and move the boundaries of the global paging area of the mobile station. If the recorded positions of the mobile station show quick, slow or no movement, the specific cells and the number of cells in the global paging area of the mobile station can be dynamically changed according to the movement and the predicted movement of the mobile station.

Hanson is cited for teaching a database node that maintains the record of the most recent location of the mobile station for the reasons stated above. The time and

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location are maintained and used in a different manner than the location and movement measurements of the Applicant's invention.

Claims 11 and 12 depend from claim 7 and recite further limitations in combination with the novel elements of claim 7. This being the case, the Applicant respectfully requests the withdrawal of the rejection of claims 11 and 12.

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CONCLUSION

In view of the foregoing remarks, the Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for all pending claims.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,



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